

WHAT IS CLAIMED:

1. A device, comprising:

a compressor comprising an inlet and an outlet,

a condenser, comprising an inlet and an outlet, wherein the condenser inlet is operatively coupled to the outlet of the compressor,

a metering means, comprising an inlet and an outlet, wherein the inlet of the metering means is operatively coupled to the outlet of the condenser,

an evaporator, comprising an inlet, an outlet and an evaporative surface, wherein the evaporator inlet is operatively coupled to the outlet of the metering means and the outlet of the evaporator is operatively coupled to the inlet of the compressor,

a hot gas bypass system, comprising an inlet, an outlet, an open position and a closed position, wherein the inlet is operatively coupled to the outlet of the compressor and the outlet is operatively coupled to the inlet of the evaporator or to an inlet of a manifold.

a refrigerant that circulates from the compressor to the condenser to the metering means to the evaporator and back to the compressor in a refrigeration cycle,

a controller operatively coupled to the hot gas bypass system, and

a timer operatively coupled to the controller.

2. The device of claim 1 further comprising one or more ice detection means operatively communicating with the controller.

3. The device of claim 1 further comprising at least one temperature sensing means operatively in communication with the controller.

4. The device of claim 2 further comprising at least one temperature sensing means operatively in communication with the controller.

5. The device of claim 1 wherein the manifold comprises an inlet and a plurality of outlets, each outlet being operatively coupled to a different one of a plurality of inlets at different locations on the evaporative surface,

6. A method for performing a refrigeration cycle without ice build-up on the evaporative surface, comprising:

providing a compressor comprising an inlet and an outlet;

providing a condenser, comprising an inlet and an outlet, wherein the condenser inlet is operatively coupled to the outlet of the compressor;

providing a metering means, comprising an inlet and an outlet, wherein the inlet of the metering means is operatively coupled to the outlet of the condenser;

providing an evaporator, comprising an inlet, an outlet and an evaporative surface, wherein the evaporator inlet is operatively coupled to the outlet of the metering means and the outlet of the evaporator is operatively coupled to the inlet of the compressor;

providing a hot gas bypass system, comprising an inlet, an outlet, an open position and a closed position, wherein the hot gas bypass means inlet is operatively coupled to the outlet of the compressor and the hot gas bypass means outlet is operatively coupled to the inlet of the evaporator or to an inlet of a manifold,

providing a controller capable of actuating the hot gas bypass system; a timer capable of sending a signal to the controller; and

providing a refrigerant that circulates from the compressor to the condenser to the metering means to the evaporator and back to the compressor in a refrigeration cycle.

Providing a timer capable of sending a signal to the controller.

7. The method of claim 6 further comprising the step of causing the timer to send a signal to the controller causing the controller to alternately activate and deactivate the hot gas bypass system

8. The method of claim 6 further comprising the step: providing a temperature sending means.

9. The method of claim 8 further comprising the step: causing the timer to send a signal to the controller causing the controller to activate the gas bypass system.

10. The method of claim 9 further comprising the step: causing the temperature sending means to send a signal to the controller causing the controller to deactivate the gas bypass system.

11. The method of claim 8 further comprising the step: causing the temperature sensing means to send a signal to the controller causing the controller to activate the gas bypass system.

12. The method of claim 11 further comprising the step: causing the timer to send a signal to the controller causing the controller to deactivate the gas bypass system.

13. The method of claim 6 further comprising the step: providing an ice detection means.

14. The method of claim 13 further comprising the step: causing the timer to send a signal to the controller causing the controller to activate the hot gas bypass system.

15. The method of claim 9 further comprising the step: causing the ice detection means to send a signal to the controller causing the controller to deactivate the hot gas bypass system.

16. The method of claim 13 further comprising the step: causing the ice detection means to send a signal to the controller causing the controller to activate the hot gas bypass system.

17. The method of claim 11 further comprising the step: causing the timer to send a signal to the controller causing the controller to deactivate the gas bypass system.

18. A method for performing a refrigeration cycle without ice build-up on the evaporative surface, comprising:

providing a compressor comprising an inlet and an outlet;

providing a condenser, comprising an inlet and an outlet, wherein the condenser inlet is operatively coupled to the outlet of the compressor;

providing a metering means, comprising an inlet and an outlet, wherein the inlet of the metering means is operatively coupled to the outlet of the condenser;

providing an evaporator, comprising an inlet, an outlet and an evaporative surface, wherein the evaporator inlet is operatively coupled to the outlet of the metering means and the outlet of the evaporator is operatively coupled to the inlet of the compressor;

providing a hot gas bypass, comprising an inlet, an outlet, an open position and a closed position, wherein the hot gas bypass inlet is operatively coupled to the outlet of the compressor and the hot gas bypass outlet is operatively coupled to the inlet of the evaporator or to an inlet of a manifold, wherein:

the manifold comprises an inlet and a plurality of outlets, each outlet being operatively coupled to a different one of a plurality of inlets at different locations on the evaporative surface;

providing a controller operatively coupled to the hot gas bypass;

providing a refrigerant that circulates from the compressor to the condenser to the metering means to the evaporator and back to the compressor in a refrigeration cycle; and

providing a signal source communicating with the controller.

19. The method of claim 18 wherein the signal source comprises at least one signal source selected from the group consisting of: a timer means, a temperature sensing means, and a ice detection means.

20. The method of claim 18 wherein the signal source comprises at least two signal sources selected from the group consisting of: a timer means, a temperature sensing means, and a ice detection means.

21. The method of claim 19 further comprising the step: causing at least one signal source to signal the controller to activate the hot gas bypass.

22. The method of claim 21 further comprising the step: causing at least one signal source to signal the controller to deactivate the hot gas bypass.

23. The method of claim 19 further comprising the step: causing a signal from at least one signal source selected for the group comprising a timer means, a temperature sensing means, and a ice detection means to be received by the controller, causing the controller to activate the hot gas bypass.

24. The method of claim 23 further comprising the step: causing a signal from at least one signal source selected for the group comprising a timer means, a temperature sensing means, and a ice detection means to be received by the controller, causing the controller to deactivate the hot gas bypass.